Institute of Behavioral Science

IBS is a GFSU Centre for postgraduate education and research in the mind-brain domain, with central focus on criminal behaviour, forensic psychology, and clinical psychology. The mutually interactive effects in the neurocognitive, neurobehavioral, psychobiological, and psychosocial domains are the focus of various courses and research in the institute. The courses give opportunity to specialize in these areas for understanding not only the deviations and their effects but also methods for enhancing mental capabilities for reducing the effects of stress and diseases on the mind.

IBS conducts postgraduate courses in Forensic Psychology, Neuropsychology, and Clinical Psychology. Other than M.Sc. courses in Forensic Psychology and Neuropsychology, two courses in M.Phil. Clinical and Forensic Psychology, each of 2 years duration, have been offered. Additionally IBS offers a Postgraduate Diploma in Forensic Psychology and Professional Diploma in Forensic Psychology of one-year duration. The M.Phil. Clinical Psychology is RCI (Research Council of India) approved and monitored. IBS intends to start a one year Postgraduate Diploma in Child Psychology from 2014. Additionally IBS conducts special separate training programs in investigative psychological methods for Bureau of Police Research & Development of India and other investigative and security professionals.

The clinical training of Clinical Psychology trainees is primarily conducted in the Government Hospital for Mental Health, Ahmedabad. The students carry out psychological diagnostic assessments of inpatients and outpatients of the hospital. They are also trained in behaviour modification techniques and psychotherapy. The faculties of Psychiatry Department there provide clinical supervision as well as lectures to these trainees. Additionally, IBS posts its trainees to Gujarati Medical, Education and Research Society, Gandhinagar (GMERS Hospital), from where patients are referred for psychological assessments to IBS.

The Buddha Psychological Services Centre (BPSC) at the IBS provides consultation services, in terms of diagnostic assessments, therapeutic and rehabilitative services, to children with learning disorders, Autism and ADHD children. The center has facilities for Neurofeedback, Biofeedback and computerized cognitive retraining programs. IBS provides psychological services to offenders in both civil and criminal cases on outdoor basis. IBS provides counselling services (Buddha Counselling Centre) at Sabarmati Central Prison of Ahmedabad, for jail inmates.

IBS has unique Neuropsychology – Forensic Psychology laboratory with multiple facilities for electrophysiological (EEG and ERP) experiments and all Neuropsychology and Forensic Psychology students are trained in learning recording and conducting EEG and ERP experiments and computer analyses of the electrophysiological data in the frequency-time domains. They are also trained in Brain Electrical Oscillations Signature (BEOS) profiling for extracting information from memory (autobiographic memory) and polygraphs for deception detection.
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Emeritus Professor C. R. Mukundan, Ph.D., D.M. & S.P., is Director in Charge of IBS from April 16, 2013.

My association with this reputed world forensic center started in 2003, when I signed MOU with the Directorate of Forensic Science Laboratory, as a Professor from NIMHANS, Bangalore. The intense academic and research interests of the staff of DFS was evident in those days itself, which became the foundation for starting a forensic university. This prompted collaborative research for application of cognitive neuroscience in the area investigative psychology. The challenges that IBS has taking up are of immense value to this country for understanding the basic social processing patterns and responses of its people to the processing changes, which have precipitated varying criminal acts by its citizens. Understanding the brain – behaviour relationship and the development of psychological and social factors that precipitate clinically and forensically significant responses and actions are the basic bottoms up methods to understand the genesis of this aspect of behaviour and their corrections and rehabilitation of the affected individuals. Starting the clinical psychology course has further helped to understand the clinically significant aberrations in individuals which may give rise to criminal thoughts and behaviour, as well as for developing psychological methods for the correction of the related thoughts and responses. The Postgraduate, M.Phil. and Doctoral courses in Forensic Psychology would create the much needed experts in Forensic Psychology for the country. This is further supported by the Postgraduate and Doctoral courses in Neuropsychology with extensive training in cognitive neuroscience, which help to create young specialists who can confidently handle issues in the domains of the brain – mind – behavior processing. We are looking at the genesis of problems of socialization and origin of criminal behavior in young children, along with other multiple problems in learning disorders, autism, ADHD, and mental retardation, etc. by providing training in Child Psychology for postgraduates. In addition, we have started training program in the form of Professional Diploma in Forensic Investigative Psychology for investigators and security professionals, which would train them in multiple methods of forensic psychological investigations.

Infrastructure & Facilities

The Institute of Behavioral Science has facilities across 2887 square meter areas in three floors, in the new GFSU building. The ground floor has the Budha Psychological Services with 12 rooms for patient interview – testing - psychological therapies.

The IBS has 5 lecture halls and 2 seminar halls. It has a computer room for its students and a library other than the main GFSU library. The faculty rooms are in the second floor, with separate room for each faculty. There are rooms for visiting faculty. IBS has a unique laboratory facility (DFS-IBS laboratory), which has 5 independent EEG – ERP recording facilities along with an independent BEOS recording. There are facilities for Neurofeedback and Biofeedback research and service. A Polygraph room for deception detection studies and facilities for training in suspect detection (SDS) and voice analyses for detection of deception are the additional laboratory facilities. All the research laboratories in the third floor and the experimental rooms are sound treated. As consciousness is an important area of research interest, the institute is developing special facilities for sleep and hypnosis research.

Clinical psychological interviewing, diagnostic testing, counselling and psychotherapy, relaxation therapy and behaviour therapies are offered to patients and clients as part of clinical psychological services of IBS. Such services to children with learning disorders and other psychiatric and neurological problems and training of professionals are being developed to meet the immense demands for the same in this part of the country.

All Neuropsychology and Forensic Psychology students are trained in conducting and recording multichannel EEG and Event Related Potential experiments. They are trained in QEEG (frequency domain) analyses and time domain analyses, and encouraged to carry out research projects using these techniques as part of their course requirements.
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### Course Structure

Three major academic domains for educational courses are Forensic Psychology, Clinical Psychology, and Neuropsychology. Academic program starts at postgraduate level with M.Sc. in Forensic Psychology and Neuropsychology, and Post Graduate Diploma courses of one-year duration in Forensic Psychology and Child Psychology. This is followed by M.Phil. in Forensic Psychology and Clinical Psychology, which are courses of two years duration. Clinical Psychology students are trained in the Ahmadabad Mental Hospital. IBS also has MOU with other Psychiatric Centres in Gandhinagar and Ahmedabad, which the students visit for clinical training.

Internship at the DFS, Gandhinagar is an integral part of the forensic psychology training. These students are trained in various electrophysiological and psychological investigative methods in the laboratories at IFS/DFS.

<table>
<thead>
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<tbody>
<tr>
<td><strong>M.Sc. PROGRAMS</strong></td>
<td></td>
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</table>
| M.Sc. Forensic Psychology (2 years, 4 Semesters) | Forensic Psychology  
  - Psychobiology of Crime  
  - Socialization, Crime precipitating factors  
  - Psychological Assessment & Investigative Psychology  
  - Legal Issues                                                                 | Graduate in Psychology or Science subjects from recognized university with a minimum of 55% marks in aggregate. For SC/ST category, minimum of 50% marks in aggregate. |
| M.Sc. Neuropsychology (2 years, 4 Semesters) | Neuropsychology  
  - Basic Brain Anatomy and Physiology  
  - Cortical and subcortical functional systems  
  - Neuropsychological development & tests  
  - Neurocognitive paradigms & (EEG, ERP) Assessments | Graduate in Psychology or Science subjects from recognized university with a minimum of 55% marks in aggregate. For SC/ST category, minimum of 50% marks in aggregate. |
| **M.Phil. PROGRAMS**  |                                                                                        |                                                                            |
| M.Phil. Forensic Psychology (2 years, 4 Semesters) | Forensic Psychology  
  - Psychiatry and Neuroscience  
  - Psychobiology of Crime  
  - Therapeutic and Rehabilitative methods  
  - Psychological Assessment & Investigative Psychology  
  - Legal Issues  
  - Research Methods                                                                 | Master’s Degree in Psychology from recognized university with a minimum of 55% marks in aggregate. For SC/ST/OBC category, minimum of 50% marks in aggregate. |
| M.Phil. Clinical Psychology (RCI Approved) (2 years, Annual system) | Clinical Psychology  
  - Psychosocial and Biological Foundations of Behaviour  
  - Psychiatric disorders  
  - Clinical Psychological & Neuropsychological Assessment  
  - Psychological Therapies & Behavioural Medicine  
  - Research Methods                                                                 | Master’s Degree in Psychology from recognized university with a minimum of 55% marks in aggregate. For SC/ST/OBC category, minimum of 50% marks in aggregate. |
| **POST GRADUATE DIPLOMA PROGRAMS** |                                                                                        |                                                                            |
| PGDFP (1 year, 2 semester) | Forensic Psychology  
  - Psychobiology of Crime  
  - Rehabilitative and counselling methods  
  - Forensic Interviewing & Legal Issues  
  - Psychological Assessment & Investigative Psychology | Master’s Degree in Psychology from recognized university with a minimum of 55% marks in aggregate. For SC/ST/OBC category, minimum of 50% marks in aggregate. |
| PGDCP (1 year, 2 semester) | Child Psychology  
  - Developmental Psychology and disorders  
  - Learning disorders, Autism, ADHD, Mental Retardation  
  - Psychological assessments & treatment programs  
  - Neurocognitive treatment programs | Master’s Degree in Psychology from recognized university with a minimum of 55% marks in aggregate. For SC/ST/OBC category, minimum of 50% marks in aggregate. |
| **PROFESSIONAL DIPLOMA PROGRAM** |                                                                                        |                                                                            |
| PDFIP (1 year, 2 semester) | Forensic Investigative Psychology  
  - Training in Forensic interviewing, Investigative Psychology | Police Investigative, Security, and Legal Professionals, with work experience. |
### Program and Duration Areas of Specialization Eligibility

#### M.Sc. PROGRAMS

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<td>Forensic Psychology - Psychiatry and Neuroscience, Psychology of Crime, Therapeutic and Rehabilitative methods, Psychological Assessment &amp; Investigative Psychology, Legal Issues, Research Methods</td>
<td>Graduate in Psychology or Science subjects from recognized university with a minimum of 55% marks in aggregate. For SC/ST category, minimum of 50% marks in aggregate.</td>
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<tr>
<td>M.Sc. Neuropsychology (2 years, 4 Semesters)</td>
<td>Neuropsychology - Basic Brain Anatomy and Physiology, Cortical and subcortical functional systems, Neuropsychological development &amp; tests, Neurocognitive paradigms &amp; (EEG, ERP) Assessments</td>
<td>Graduate in Psychology or Science subjects from recognized university with a minimum of 55% marks in aggregate. For SC/ST category, minimum of 50% marks in aggregate.</td>
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#### M.Phil. PROGRAMS

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<td>M.Phil. Forensic Psychology (2 years, 4 Semesters)</td>
<td>Forensic Psychology - Psychiatry and Neuroscience, Psychology of Crime, Therapeutic and Rehabilitative methods, Psychological Assessment &amp; Investigative Psychology, Legal Issues, Research Methods</td>
<td>Master’s Degree in Psychology from recognized university with a minimum of 55% marks in aggregate. For SC/ST/OBC category, minimum of 50% marks in aggregate.</td>
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<tr>
<td>M.Phil. Clinical Psychology (RCI Approved) (2 years, Annual system)</td>
<td>Clinical Psychology - Psychosocial and Biological Foundations of Behaviour, Psychiatric disorders, Clinical Psychological &amp; Neuropsychological Assessment, Psychological Therapies &amp; Behavioural Medicine, Research Methods</td>
<td>Master’s Degree in Psychology from recognized university with a minimum of 55% marks in aggregate. For SC/ST/OBC category, minimum of 50% marks in aggregate.</td>
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#### POST GRADUATE DIPLOMA PROGRAMS

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<td>PGDFP (1 year, 2 semester)</td>
<td>Forensic Psychology - Psychiatry of Crime, Rehabilitative and counselling methods, Forensic Interviewing &amp; Legal Issues, Psychological Assessment &amp; Investigative Psychology</td>
<td>Master’s Degree in Psychology from recognized university with a minimum of 55% marks in aggregate. For SC/ST/OBC category, minimum of 50% marks in aggregate.</td>
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<td>PGDCP (1 year, 2 semester)</td>
<td>Child Psychology - Developmental Psychology and disorders, Learning disorders, Autism, ADHD, Mental Retardation, Psychological assessments &amp; treatment programs, Neurocognitive treatment programs</td>
<td>Master’s Degree in Psychology from recognized university with a minimum of 55% marks in aggregate. For SC/ST/OBC category, minimum of 50% marks in aggregate.</td>
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#### PROFESSIONAL DIPLOMA PROGRAM

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<td>PDFIP (1 year, 2 semester)</td>
<td>Forensic Investigative Psychology - Training in Forensic interviewing, Investigative Psychology</td>
<td>Police Investigative, Security, and Legal Professionals, with work experience.</td>
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Information about the Courses

**Clinical Psychology Course**

The Professional Diploma Course

Forensic Psychology Courses

Neuropsychology Course

Clinical Psychology Course

The M. Phil. Clinical Psychology is an RCI (Rehabilitation Council of India) approved program and the training is conducted as approved and monitored by RCI. The students receive clinical training every day in diagnostic and therapeutic interviewing, testing, and psychological management of psychiatric conditions and all psychological states. They are provided with adequate academic understanding of mental health problems and issues and are encouraged to work with psychosocial issues of all physical and psychiatric diseases. Training allows them to learn psychological diagnostic and management formulations and learn research methods and biological foundations of behavior. They have the opportunity to learn problems of children and testing those with learning disabilities, ADHD, autism, etc. They are trained in the preparation of psychological diagnostic reports for psychiatric, medical, and legal applications.

Child Psychology Course

This is a new endeavor for imparting training in diagnosing and offering remedial measures for the problems of children. Issues related to the problems of children in a developing country significantly differ from that of other countries and the special course is developed to offer training in acquiring the skills required to understand the varying problems and methods for their remediation. Child Psychology will train the post-graduates in understanding the various cognitive and emotional problems for their diagnosis, and the trainees will be trained in the use of behavioral measures, Cognitive Retraining programs, Neurofeedback programs, and other psychological remedial measures including counselling for parents.

The Professional Diploma Course

The Professional Diploma Program is for in-service professionals engaged in crime investigation. They may be from Police, Intelligence and Crime Investigating agencies, or private security services, who need to be deputed for the course.
Information about the Courses

Forensic Psychology Courses

The training programs of IBS have forensic psychological (brain – behavior interface and psychosocial) aspects as the core specialty. IBS is the only University in India, which has taken up the responsibility to develop the wide range of forensic psychological specialty for professional training and research at the postgraduate levels. The training programs are provided through academic exposures and practical training in supervised internships. Academic exposures in different areas relevant to forensic psychology are provided through lectures in 2 – 4 semesters, when they are also expected to carry out assignments and presentations. Practical demonstrations and trainings for explaining the theoretical bases are essential parts of postgraduate training.

Post graduate diploma and M.Phil. Programs provide internships for these students in the Directorate of Forensic Sciences, Gandhinagar, and they receive supervised training and they have opportunity to understand legal aspects of investigations. They are also posted in rehabilitation centers and prisons for exposure and understanding of the social realities and methods of handling criminals and juvenile persons. Each student is trained in forensic interviewing and has opportunity for learning polygraph and EEG recording techniques and their important principles for facilitating acquiring expertise in Lie-Detection tests. Brain Electrical Oscillations Signature Profiling, techniques extensively used at DFS for forensic investigations. They have opportunity to witness various other psychological methods (for e.g. hypnosis) of extraction of information from suspects and accused, during their training.

Neuropsychology Course

Neuropsychology is the base subject for understanding brain-behavior-mind, and this is first effort in India to offer neuropsychology as an academic subject at the University level. Though Neuropsychology is a very advanced area of post-graduate education and technology development outside India, it was not available as a University specialization program. The M.Sc. level program is essentially for training in the basic academic Neuropsychology, which comprises of understanding sensory-motor systems, complex motor programming, executive functions, sequential-semantic processing, visuospatial processing, emotions, arousal, and wakefulness - sleep. The program includes neuropsychological testing procedures, which includes practical training and theory of EEG and ERP measures.

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**IBS-DFS Laboratories**

The laboratory facilities include independent EEG and ERP recording laboratories, with independent 128, 64, 32, 16 channels recording facilities with multiple cognitive tests in visual and auditory modalities. Students are trained in visual quantitative and large spectrum of frequency – time domain analysis of EEG activities. This will include quantification of power spectrum, coherence, and other related functions of EEG and time domain analyses of various ERP components. BEOS system is the only automated recording and analyses system, which can present stimuli to subjects while the online electrical activity is within predefined dimensions and carry out sequence of multiple analyses related to sensory registration, semantic processing, shift in attention, source memory retrieval of source memory and presence creation of imageries and emotional responses.

The laboratory has Polygraph and Polygraph and EEG recording systems for training students in various lie-detection tests.

Additional equipments are available for biofeedback and Neurofeedback recording and psychological tests for testing cognitive functions and other psychological constructs.

**Research Activities**

Faculties are engaged in several collaborative research and development activities at other national institutions. These are related to development of handheld multichannel EEG system and dry-electrode recording for rural applications with QEEG analysis and telemedicine facilities, EEG analysis in sleep-wakefulness conditions, effects of hypnosis and coma on EEG, and upgrading of BEOS system.

There is also ongoing collaborative research on developing adaptation of subtests of Kaufman assessment battery for children (Second edition KABC-II) for Gujarati pre-school children.

M.Phil. Clinical Psychology and Forensic Psychology students are expected to submit dissertation after carrying out research projects under supervision of the faculty. Faculty is also interested in carrying out research related to rehabilitation of psychiatric patients, and the related works are in progress.
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**Dr. Mukundan, C. R.**  
Ph.D., D.M. & S.P.  
Professor Emeritus, Director in Charge  
**Specialization:** Cognitive Electrophysiology, Clinical Psychology - Neuropsychology  
**Publications:** 83  
**Current research interests:** Continuing research and development of BEOS technology with IP, collaborating in developing handheld EEG system with QEEG analysis, quantification of EEG in sleep – wakefulness – coma, hypnosis, mind - brain effects, socialization - early social conditioning for action/response control

**Dr. Rejani, T. G.**  
Ph.D., M.Phil.  
Assistant Professor in Clinical Psychology  
**Specialization:** Clinical Psychology (Child and adolescent Mental Health)  
**Publications:** 12  
**Current clinical and research interests:** Externalizing disorders, sexual abuse, epidemiological studies, school mental health, De-addiction

**Dr. Priyanka Kacker**  
Ph.D., PGDCAH  
Assistant Professor in Forensic/Neuropsychology  
**Specialization:** Forensic Psychology, Neuropsychology, Clinical Psychology & Hypnotherapy  
**Publications:** 19  
**Current Clinical and Research interests:** States of consciousness and remembrance, hypnotic trance and effects on brain, forensic applications of hypnosis – EEG-ERP based forensic psychological investigations, Neurofeedback, and creativity, social conditioning, and cognitive enhancement in children

**Dr. Proshanto KR Shaha**  
Ph.D.  
Assistant Professor in Forensic/Neuropsychology  
**Specialization:** Forensic Psychology, Cognitive Neuropsychology  
**Publications:** 5  
**Current Clinical and Research interests:** Criminal Profiling, Juvenile problems and their rehabilitation, EEG-ERP based forensic psychological investigations, Neurocognitive functions (Attention) in Neuropsychiatric conditions.

**Dr. Smita Pande**  
Ph.D., M.Phil.  
Lecturer in Clinical Psychology  
**Specialization:** Clinical Psychology, Clinical Neuropsychology  
**Publications:** 9  
**Current Clinical and Research interests:** Clinical neuropsychological assessment, cognitive retraining and rehabilitation

**Mr. Biswajit Dey**  
M. Phil.  
Lecturer in Clinical Psychology  
**Specialization:** Clinical Psychology  
**Current Clinical and Research interests:** Projective tests of personality, biofeedback treatment for psychological problems

**Ms. Richa Singh**  
M.Phil.  
Lecturer in Clinical Psychology  
**Specialization:** Clinical Psychology  
**Publication:** 1  
**Current Clinical and Research interests:** Psychotherapy and Psychosocial Rehabilitation
Dr. Mukundan, C. R.
Ph.D., D.M. & S.P
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Dr. Rejani, T. G.
Ph.D., M.Phil.
Assistant Professor in Clinical Psychology

Specialization: Clinical Psychology (Child and adolescent Mental Health)
Publications: 12

Member of Peer review committees of 5 international journals

Dr. Priyanka Kacker
Ph.D., PGDCAH
Assistant Professor in Forensic/Neuropsychology

Specialization: Forensic Psychology, Neuropsychology, Clinical Psychology & Hypnotherapy
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Current Clinical and Research interests: States of consciousness and remembrance, hypnotic trance and effects on brain, forensic applications of hypnosis – EEG-ERP based forensic psychological investigations, Neurofeedback, and creativity, social conditioning, and cognitive enhancement in children

Dr. Smita Pande
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Lecturer in Clinical Psychology

Specialization: Clinical Psychology, Clinical Neuropsychology
Publications: 9

Current Clinical and Research interests: Clinical neuropsychological assessment, cognitive retraining and rehabilitation

Mr. Biswajit Dey
M. Phil.
Lecturer in Clinical Psychology

Specialization: Clinical Psychology

Current Clinical and Research interests: Projective tests of personality, biofeedback treatment for psychological problems

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Current Clinical and Research interests: Behavioral Medicine, Psychosocial Rehabilitation and psychotherapy

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Specialization: Clinical Psychology, Neuropsychology

Current Clinical and Research interests: Neurofeedback, cognitive retraining
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Specialization: Clinical Psychology  

Current Clinical and Research interests: Behavioral Medicine, Psychosocial Rehabilitation and psychotherapy  

Mr. Khoibi Singh  
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Specialization: Clinical Psychology, Neuropsychology  

Current Clinical and Research interests: Neurofeedback, cognitive retraining